

Appl. No.: 10/627,166
Amdt. Dated 09/23/05
Reply to Office Action of April 27, 2005

REMARKS/ARGUMENTS

Applicant thanks the Examiner for the courtesies extended to the undersigned during the telephonic interview on September 21, 2005. As discussed during the interview, Applicant has amended independent Claims 1, 9, 18, 26, 34, and 41 to more clearly define the claimed invention. Specifically, Applicant has amended independent Claims 1, 18, 26, 34, and 41 to delete the recitations relating to compressive strength and/or to modify certain transitional wording. The recitations relating to compressive strength for independent Claims 1, 18, and 26 have been represented in new dependent Claims 44, 45, and 46, respectively. Independent Claims 1, 9, 18, 26, 34, and 41 have also been amended to recite that the bottom ash comprises a fine portion and a coarse portion, and independent Claims 9, 18, 26, 34, and 41 have been further amended to recite that the cementitious composition has bottom ash and cement in a ratio of between about 2:1 and about 2:3 by weight, as previously recited in dependent Claims 15, 23, 30, and 38. Applicant has further amended independent Claims 9, 26, 34, and 41 to recite that the bottom ash has a particle size of less than about .75 inches, as previously recited in dependent Claims 16, 31, and 36. As a result of these amendments, dependent Claims 15, 16, 23, 30, 31, 35, and 38 have been cancelled, and dependent Claim 37 has been amended to read consistently with amended independent Claim 34.

Applicant requests reconsideration of Claims 1, 3-14, 17, 18, 20-22, 24-27, 29, 32-34, 36, 37, and 39-46 in view of the Amendments and Remarks set forth herein. In accordance with MPEP 713.04, the following is considered to be a summary of the matters discussed during the interview.

The Rejections Under 35 U.S.C. § 112, First and Second Paragraphs, Should Be Withdrawn

The Office Action rejected Claims 1, 3-18, 20-27, and 29-43 under 35 U.S.C. § 112, first paragraph, asserting that the claims are not commensurate with an enabling disclosure, and under 35 U.S.C. § 112, second paragraph, as failing to set forth the subject matter the applicant regards as his invention. As discussed during the interview, Applicant respectfully disagrees with the rejection under 35 U.S.C. § 112, first paragraph. Inasmuch as 35 U.S.C. § 112, first paragraph,

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sets forth requirements for the specification and not the claims, Applicant submits that the rejection of Claims 1, 3-18, 20-27, and 29-43 is improper under 35 U.S.C. § 112, first paragraph. To the extent the rejection was intended to be directed to the specification, Applicant submits that the specification clearly provides an enabling disclosure. In this regard, the specification discloses the type of cement (page 9, lines 24-29), the material composition of the bottom ash (page 10, lines 1-19), the particle size distribution of the bottom ash (page 10, line 20 – page 12, line 2), and the water content (page 12, lines 19-19) for various embodiments of the invention. Furthermore, as evidenced by the references, the scope of the term “bottom ash” is understood by a person of ordinary skill in the art. The specification also clearly teaches one of ordinary skill in the art how to make and use the claimed invention without undue experimentation. Specifically, the specification discloses how to achieve a lightweight cement mix capable of forming a structural product with a high compressive strength (pages 14-18 and Figures 7A-9D).

The Office Action asserts that the specification does not provide an example or any particular literal support that says a specific amount of bottom ash, water, and cement lead to the compressive strengths of the claims. Applicant directs the Examining Attorney's attention to pages 14-18 and Figures 7A-9D of the specification, which discloses to those of ordinary skill in the art how to achieve a lightweight cement mix of high compressive strength. For example, Figure 7A, which is provided for purposes of example only and not limitation, illustrates the compressive strength data for seven compositions prepared using the corresponding bottom ash mixtures illustrated in Figures 6A and 6B. These seven compositions differ from each other in their percentages of cement by weight. As illustrated in Figure 7A, all of the compositions have a seven-day compressive strength of at least 2,500 psi and a twenty-eight-day compressive strength of at least 4,000 psi except for composition nos. 1 and 7. Furthermore, Figure 8A, when compared to Figure 7A, illustrates the effects of decreasing the amount of water, and Figure 9A, when compared to Figure 7A, illustrates the effects of varying the relative weights of the first and second portions of the bottom ash.

Regarding the rejection of Claims 1, 3-18, 20-27, and 29-43 under 35 U.S.C. § 112, second paragraph, MPEP 2173.05(c)(III) explains that the phrase “an effective amount” is definite where the disclosure provides “guidelines as to the intended utilities and how the uses

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could be achieved." The specification of the present application provides such guidelines as to the intended utilities and how the uses can be achieved. For example, the disclosure provides guidelines for the intended utilities at page 14, lines 1-12, including forming high strength structural products, grout, etc. The disclosure also provides guidelines for how the uses can be achieved, including selecting the cement (page 9, lines 24-29), sizing the bottom ash (page 10, line 20 - page 12, line 2, and in Figure 3), mixing the cement and bottom ash (page 12, lines 3-28), and forming a structural product of suitable compressive strength (pages 14-18 and Figures 7A-9D).

As discussed during the interview, in order to further address the Examiner's concerns, Applicant has amended independent Claims 1, 18, and 26 to delete the recitation relating to the compressive strength and to recite that the bottom ash comprises a fine portion and a coarse portion. In addition, independent Claims 9, 18, 26, 34, and 41 have been amended to recite that the cementitious composition has bottom ash and cement in a ratio of between about 2:1 and about 2:3 by weight. Applicant has also further amended independent Claims 9, 26, 34, and 41 to recite that the bottom ash has a particle size of less than about .75 inches. For the reasons discussed above, Applicant respectfully submits that independent Claims 1, 9, 18, 26, 34, and 41, as amended, and their corresponding dependent claims, are definite and have adequate support for purposes of 35 U.S.C. § 112, first and second paragraphs.

The Rejections Under § 102 and § 103 Directed to Claims 1-43 Are Overcome

The Office Action rejected Claims 1, 3-18, 20-27, and 29-43 under 35 U.S.C. § 102 (a) and (b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 (a) as obvious over U.S. Patent No. 5,849,075 to Hopkins et al., U.S. Patent No. 5,772,751 to Nisnevich et al., U.S. Patent No. 6,528,547 B2 to Shulman, U.S. Patent No. 6,030,446 to Doty et al., U.S. Patent No. 4,050,950 to Brewer et al., U.S. Patent No. 4,050,261 to Brewer et al., Japanese Patent No. 61021940 to Hironaka et al., DD 157092 to Kornemann et al., Berg et al. (Journal of Materials in Civil Engineering (1998)), Ghafoori et al. (Journal of Materials in Civil Engineering (1996)), Lai et al., or WO 8600290 to Eun et al. As discussed in the interview, Applicant respectfully

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submits that the cited references do not teach or suggest, either singly or in combination, the invention as claimed in independent Claims 1, 9, 18, 26, 34, and 41, as amended.

Specifically, independent Claims 1, 9, 18, 26, 34, and 41, as amended, recite a cementitious composition comprising an effective amount of bottom ash and an effective amount of cement wherein the bottom ash comprises a fine portion and a coarse portion. In contrast, the Hopkins '075 patent, Nisnevich '751 patent, Shulman '547 patent, Doty '446 patent, Hironaka '940 Japanese patent, Kornemann '092 patent, Eun '290 application, Berg article, Gahfoori article, and Lai article, each disclose combining cement, bottom ash and other materials, such as silica fumes, fly ash, expanded Polystyrene, blast-furnace slag and other adjuvants and fillers. Thus, none of the cited references, either alone or in combination, teach or suggest a cementitious composition, a cementitious product, or a method of manufacturing a cementitious product, comprising an effective amount of bottom ash and an effective amount of cement wherein the bottom ash comprises a fine portion and a coarse portion. Applicant submits that this feature of the present invention is important as it enables the creation of a more cost-efficient cementitious composition that is lightweight and capable of forming a structural product having high compressive strength.


Accordingly, it is respectfully submitted that independent Claims 1, 9, 18, 26, 34, and 41, as amended, and the claims depending therefrom, include recitations that patentably distinguish the claimed invention over the cited references and that the rejections directed to these claims be withdrawn.

* * * * *

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

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Respectfully submitted,



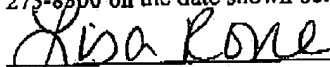
Henry B. Ward, III

Registration No. 42,212

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (571) 273-8300 on the date shown below.


Lisa Rone

September 23, 2005
Date